

World Military Expenditures and Arms Transfers, 2012 edition

Introduction

This edition of the World Military Expenditures and Arms Transfers (WMEAT) report, *WMEAT 2012*, covers the eleven-year period from 1999 through 2009, the most recent year for which final data for many parameters was available in 2012. It responds to a [statutory requirement](#) that the U.S. Department of State annually publish detailed, comprehensive and statistical information, and in-depth analyses regarding military expenditures, arms transfers, armed forces, and related economic data for each country of the world. Comments, including suggestions for improvement of the WMEAT report and identifications of apparent errors, may be addressed to WMEATeditor@state.gov.

This edition of WMEAT is published only electronically, on the website of the U.S. Department of State, in the form of four distinct downloadable core documents and a charts supplement. The core documents are:

- this "Introduction and Overview" section, in a PDF document;
- Table I, the military expenditures and armed forces personnel table, in an Excel spreadsheet workbook containing seven "world pages" (pages of global scope) and 170 country pages;
- Tables II - IV, the arms transfer tables, in an Excel spreadsheet workbook containing twelve "world pages" (no country pages); and
- a "Sources, Data and Methods" section (called the "Statistical Notes" section in previous editions of WMEAT), in a PDF document.

The Tables make up the body of this report. They offer much information not described in the "Overview." The "Sources, data and methods" section is indispensable for understanding the methodological basis for data in the tables, especially with respect to substantial and pervasive uncertainties and sources of error.

Table I presents annual and eleven-year-mean information about number of armed forces personnel, population, labor force, military expenditures, gross domestic product (GDP), and ratios of these parameters, as well as Freedom House "political rights" scores and World Bank Institute "voice and accountability in governance" scores for individual countries, for geographic, economic and political groups of countries, and for the world.

Table II presents annual and eleven-year-mean information about the value of exports and imports both of arms and of all goods and services, and ratios of these parameters, for individual countries, for geographic, economic and political groups of countries, and for the world.

Table III presents a matrix of world arms transfers by major supplier and country of destination for the three-year period from 2007 through 2009.

Table IV presents annual and ten-year-mean information about the value of arms exports of major suppliers to individual countries, geographic, economic and political groups of countries, and the world.

The "Group rankings and trends" and "Country rankings and trends" pages of both the military expenditures workbook and the arms transfers tables workbook offers rankings of both of countries and of economic (GDP-per-capita) and political (degree-of-democracy) groupings of countries, by every demographic, economic and political parameter used in preparing this report, and also by slope of trendline over time for military parameters.

New in this edition of WMEAT are a number of features, described at the start of the "Sources, data and methods" section, salient among which are the following:

- All statistical tables and rankings are presented in spreadsheet form in order to facilitate manipulation by users of this report.
- Economic and political groupings of countries are presented in the form of quintiles of world population ranked either by GDP per capita or by NGO-assessed degree of democracy, in order to provide groups that contain equal numbers of people.
- Table I presents both military spending and GDP values, and of ratios involving such values,
 - using five distinct methods of converting foreign currencies to U.S. dollars on the country pages and on the first geographic groups page, and
 - using three distinct methods of converting foreign currencies to U.S. dollars on the second geographic groups page, on the economic and political groups pages, and on the group and country "rankings and trends" pages.

Military expenditure and GDP values and ratios involving them may vary greatly depending on currency conversion method used, and no single currency conversion method seems best for all analytic purposes. The "Overview" page of Table I indicates the range of variation across conversion methods of military spending both in absolute terms and relative to GDP, for all countries and groups of countries, for both the latest year covered and for the eleven-year period average. The conversion methods used, and the advantages and disadvantages of each, are described in the "Sources, data and methods" section.

Overview

WMEAT figures, especially for armed forces personnel, military expenditures and arms transfers, are neither so accurate nor so reliable as uniform presentation in statistical tables might seem to imply, due to incompleteness, ambiguity, or total absence of data for some countries either in those parameters or in parameters, such as GDP price deflators or exchange rates, used in Table I to convert local-currency-denominated values for military spending and GDP to U.S. dollars. In Table I, apparent sources of error and extent of imprecision vary across countries, years, and parameters, and are indicated by color-coding on the pages for specific countries. In Tables II, III and IV, the quality of source data for arms transfer values is not readily assessable. In no table does either rounding or limitation on significant digits adequately reflect potential inaccuracy.

Military expenditures

From 1999 through 2009, in constant 2009 U.S. dollar terms, the annual value of world military expenditures appears to have risen about 55-60%, from about \$1.03-1.31 trillion in 1999 to about \$1.60-2.09 trillion in 2009, and to have averaged between \$1.28 and \$1.64 trillion for the 11-year period. The range of values results from using diverse methods to convert non-U.S. military expenditures to U.S. dollars. Using a real market exchange rate (real MER) for each country yields the lowest value for global military expenditures; using the purchasing power parity rate for each foreign country's whole economy (PPP-for-GDP) yields the highest value.

Military burden (ratio of military expenditures to GDP)

During the eleven-year period, for the world the share of GDP to which military expenditure was equivalent -- an indicator sometimes called "the military burden" -- appears to have averaged between 2.3% and 2.7%, trending upward. Converting non-U.S. military expenditures and GDPs to U.S. dollars using PPP-for-GDP yields the greatest military burden; converting non-U.S. GDPs at PPP-for-GDP while converting non-U.S. military expenditures at a notionally estimated defense-sector-specific PPP rate yields the least military burden.

Despite the increase in the world military burden during the period, military spending still accounted for a far lower share of measured global economic output in 2009 than in 1989, at the end of the Cold War, when it appears to have been about 4.7% at a real MER.

Armed forces

The number of people serving in the world's armed forces appears to have fallen from 22.0 million in 1999 to 19.8 million in 2009, a drop of about 10% in absolute terms. It appears to have fallen about 22% in per capita terms, from about 0.37% to about 0.29% of total population. It appears to have fallen by about 24% as a proportion of the labor force, from about 0.81% to about 0.62%. Armed forces personnel as a share of the labor force appears to have trended downward over the period in every region, and for every economic and political group of countries covered in the report, *i.e.*, for every quintile of world population ranked either by GDP per capita or by NGO-assessed degree of democracy.

From 1999 through 2009, world military expenditures per armed forces member -- an indicator of the capital-intensivity of the military -- appear to have risen steadily by 71-78%. As above, the range results from using different methods of converting non-U.S. military expenditures to U.S. dollars. Military spending per armed forces member appears to have risen in every region except Southern Africa, and for every economic and political group of countries.

The world ratio of military spending per armed forces member to GDP per labor force member -- an indicator of the capital-intensivity of the military relative to that of the economy as a whole -- appears to have averaged between 3.2 and 3.8, trending upward for some regions, some economic groups, and some political groups, but downward for others.

Arms transfers

In this edition of WMEAT, "world" or "global" arms transfers include only those between identifiable countries covered by WMEAT. Arms transfers to unidentified countries are excluded. Such arms transfers are recorded in Tables II, III and IV but not added into the "world" total. From 1999 to 2009, these "other" arms transfers, largely U.S. arms exports to multi-country or undisclosed destinations, increased from about 3% to above 10% of the value of "world" arms transfers. The discussion in this section is of "world" arms trade only.

From 1999 to 2009, the global annual value of international arms transfer deliveries appears to have risen by about one-third, from about \$85 billion to about \$115 billion, while averaging about \$98 billion. The arms trade's share of world trade in goods and services appears to have ranged from about 0.6% to about 0.9%, trending downward until 2008. The value of the world arms trade remained virtually unchanged during the global recession from 2008 to 2009, while the value of world trade in all goods and services contracted sharply.

During the period, about 75% of the world arms trade, by value, appears to have been supplied by the *United States*, about 13% by the *European Union*, less than 6% by Russia, less

than 2% by China. The U.S. share of the world arms market appears to have grown, while the E.U. share appears to have diminished.

Countries in the richest quintile of world population appear to have accounted for almost 91% of world arms exports and about 81% of world arms imports, when quintiles are based on national GDP per capita at a real market exchange rate. When they are based on purchasing power parity, countries in the richest quintile appear to have accounted for almost 97% of world arms exports but only about 78% of world arms imports. By either standard, the richest quintile was the only quintile with a positive arms trade balance.

Countries in the most democratic quintile of world population appear to have accounted for 91% of world arms exports and about 63% of world arms imports. The most democratic quintile was the only quintile with a positive arms trade balance.

U.S. arms exports appear to have averaged about \$73 billion a year, while U.S. arms imports appear to have averaged only about \$3 billion a year. Over the period, the world arms trade surplus of the U.S. appears to have been equivalent to about 12% of its total trade deficit.

Between 85% and 90% of U.S. arms exports appears to have been delivered to countries in the richest quintile of world population, which appear to have sourced about 82% of their arms imports from the U.S. About 73% of U.S. arms exports appears to have been delivered to countries in the most democratic quintile of world population, which appear to have sourced about 86% of their arms imports from the U.S. The countries in the richest quintile appears to have sourced an increasing proportion of their arms imports from the U.S.

Both the growth in the world arms trade and the increase in the U.S. share of world arms exports during the period appear due largely to increasing reliance on the U.S. as a source of arms by other rich, democratically-governed countries. In the context of sharp increases in military spending per armed forces member both by the richest and by the most democratic quintile, this seems to suggest that rich, democratic countries may increasingly have obtained their most sophisticated arms from the U.S.